

B'
Cont
at

a current generator having a first resistance,
and

a circuit connected to said current generator
and to said capacitance comprising a second
resistance and enabling a capacitance charging
current to be proportional to a square of a ratio of
the second resistance and the first resistance.

Sub
Div

10. A voltage ramp generator according to Claim 9,
wherein said charging circuit comprises a degenerate current
mirror circuit.

11. A voltage ramp generator according to Claim 10,
wherein said degenerate current mirror circuit comprises:

a first MOS transistor having a channel of a first
conductivity type comprising a gate, a drain and a source, the
drain and the gate being connected to said current generator,
and the source being connected to said second resistance; and

a second MOS transistor having a channel of the
first conductivity type comprising a gate, a drain and a
source, the gate being connected to the gate of said first MOS
transistor, the source being connected to a supply voltage,
and the drain being connected to said capacitance.

12. A voltage ramp generator according to Claim 11,
wherein each of said first and second MOS transistors
comprises a P-channel MOS transistor.

13. A voltage ramp generator according to Claim 9,
wherein said capacitance comprises a gate capacitance of a MOS
transistor.

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

14. A voltage ramp generator according to Claim 9, wherein current generated by said current generator is based upon the equation:

Cont

$$I_{g2} = K2 \times \frac{V_{g2}}{R_{g2}}$$

where I_{g2} is the current, $K2$ is a proportionality coefficient, R_{g2} is the first resistance, and V_{g2} is a

reference voltage proportional to the quantity $k \frac{T}{q}$, where k is the Boltzmann constant, T is absolute temperature, and q is the charge of an electron.

Sub
B2

✓ 15. A voltage ramp generator comprising:
a capacitance; and
a charging circuit connected to said capacitance and comprising

a current generator, and
a degenerate current mirror circuit connected to said current generator and to said capacitance for generating a capacitance charging current.

16. A voltage ramp generator according to Claim 15, wherein said current generator has a first resistance, and said degenerate current mirror circuit has a second resistance such that the capacitance charging current is proportional to a square of a ratio of the second resistance and the first resistance.

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

17. A voltage ramp generator according to Claim 15,
wherein said degenerate current mirror circuit comprises:

a first MOS transistor having a channel of a first
conductivity type comprising a gate, a drain and a source, the
drain and the gate being connected to said current generator,
and the source being connected to said second resistance; and

a second MOS transistor having a channel of the
first conductivity type comprising a gate, a drain and a
source, the gate being connected to the gate of said first MOS
transistor, the source being connected to a supply voltage,
and the drain being connected to said capacitance.

18. A voltage ramp generator according to Claim 17,
wherein each of said first and second MOS transistors
comprises a P-channel MOS transistor.

19. A voltage ramp generator according to Claim 15,
wherein said capacitance comprises a gate capacitance of a MOS
transistor.

20. A voltage ramp generator according to Claim 15,
wherein current generated by said current generator is based
upon the equation:

$$I_{g2} = K2 \times \frac{V_{g2}^2}{R_{g2}}$$

where I_{g2} is the current, $K2$ is a proportionality
coefficient, R_{g2} is the first resistance, and V_{g2} is a

reference voltage proportional to the quantity $k \frac{T}{q}$, where k is

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

the Boltzmann constant, T is absolute temperature, and q is the charge of an electron.

- Sub B3
- ✓ 21. A current ramp generator comprising:
a voltage ramp generator comprising
a capacitance, and
a charging circuit connected to said capacitance and comprising
a current generator having a first resistance, and
a circuit connected to said current generator and to said capacitance comprising a second resistance and enabling a capacitance charging current to be proportional to a square of a ratio of the second resistance and the first resistance; and
a conversion circuit connected to said voltage ramp generator for generating a current ramp.

Sub D6

22. A current ramp generator according to Claim 21, wherein said conversion circuit comprises a third resistance.

23. A current ramp generator according to Claim 21, wherein said third resistance comprises an implanted resistance having a positive temperature coefficient.

24. A current ramp generator according to Claim 21, wherein said charging circuit comprises a degenerate current mirror circuit.

25. A current ramp generator according to Claim 24, wherein said degenerate current mirror circuit comprises:

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

a first MOS transistor having a channel of a first conductivity type comprising a gate, a drain and a source, the drain and the gate being connected to said current generator, and the source being connected to said second resistance; and

a second MOS transistor having a channel of the first conductivity type comprising a gate, a drain and a source, the gate being connected to the gate of said first MOS transistor, the source being connected to a supply voltage, and the drain being connected to said capacitance.

26. A current ramp generator according to Claim 25, wherein each of said first and second MOS transistors comprises a P-channel MOS transistor.

27. A current ramp generator according to Claim 21, wherein said capacitance comprises a gate capacitance of a MOS transistor.

28. A current ramp generator according to Claim 21, wherein current generated by said current generator is based upon the equation:

$$I_{g2} = K2 \times \frac{V_{g2}}{R_{g2}}$$

where I_{g2} is the current, $K2$ is a proportionality coefficient, R_{g2} is the first resistance, and V_{g2} is a

reference voltage proportional to the quantity $k \frac{T}{q}$, where k is the Boltzmann constant, T is absolute temperature, and q is the charge of an electron.

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

Sub B4
✓ 29. A current ramp generator comprising:
a voltage ramp generator comprising
a capacitance, and
a charging circuit connected to said
capacitance and comprising
a current generator, and
a degenerate current mirror circuit
connected to said current generator and to said
capacitance for generating a capacitance
charging current; and
a third resistance connected to said voltage ramp
generator for generating a current ramp.

30. A current ramp generator according to Claim 29,
wherein said current generator has a first resistance, and
said degenerate current mirror circuit has a second resistance
such that the capacitance charging current is proportional to
a square of a ratio of the second resistance and the first
resistance.

Sub D8
31. A current ramp generator according to Claim 29,
wherein said third resistance comprises an implanted
resistance having a positive temperature coefficient.

32. A current ramp generator according to Claim 29,
wherein said degenerate current mirror circuit comprises:
a first MOS transistor having a channel of a first
conductivity type comprising a gate, a drain and a source, the
drain and the gate being connected to said current generator,
and the source being connected to said second resistance; and
a second MOS transistor having a channel of the
first conductivity type comprising a gate, a drain and a

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

source, the gate being connected to the gate of said first MOS transistor, the source being connected to a supply voltage, and the drain being connected to said capacitance.

33. A current ramp generator according to Claim 32, wherein each of said first and second MOS transistors comprises a P-channel MOS transistor.

34. A current ramp generator according to Claim 29, wherein said capacitance comprises a gate capacitance of a MOS transistor.

35. A current ramp generator according to Claim 29, wherein current generated by said current generator is based upon the equation:

$$I_{g2} = K2 \times \frac{V_{g2}}{R_{g2}}$$

where I_{g2} is the current, $K2$ is a proportionality coefficient, R_{g2} is the first resistance, and V_{g2} is a

reference voltage proportional to the quantity $k \frac{T}{q}$, where k is the Boltzmann constant, T is absolute temperature, and q is the charge of an electron.

36. A method for generating a ramp voltage comprising the steps of:

generating a capacitance charging current using a charging circuit comprising a current generator having a first resistance and a circuit connected to the generator comprising

In re Patent Application of
GARNIER ET AL.
Serial No. Not Yet Assigned
Filed: Herewith

*Sub
B5*
*Concl
a,
Sub
Dua*
a second resistance for enabling the capacitance charging current to be proportional to a square of a ratio of the second resistance and the first resistance; and
charging a capacitance with the capacitance charging current for generating the ramp voltage.

37. A method according to Claim 36, wherein the circuit comprises a degenerate current mirror circuit.

38. A method according to Claim 37, wherein the degenerate current mirror circuit comprises:

a first MOS transistor having a channel of a first conductivity type comprising a gate, a drain and a source, the drain and the gate being connected to said current generator, and the source being connected to said second resistance; and

a second MOS transistor having a channel of the first conductivity type comprising a gate, a drain and a source, the gate being connected to the gate of said first MOS transistor, the source being connected to a supply voltage, and the drain being connected to said capacitance.

39. A method according to Claim 36, wherein the capacitance comprises a gate capacitance of a MOS transistor.

40. A method according to Claim 36, wherein current generated by the current generator is based upon the equation:

$$I_{g2} = K2 \times \frac{V_{g2}}{R_{g2}}$$

where I_{g2} is the current, $K2$ is a proportionality coefficient, R_{g2} is the first resistance, and V_{g2} is a